

L3 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2002:408811 CAPLUS
 DN 137:5098
 TI Recombinant yeast expressing heterologous **lactate dehydrogenase** genes and their use in production of lactate
 IN Rajgarhia, Vineet
 PA Cargill Dow Polymers L.L.C., USA
 SO PCT Int. Appl., 157 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002042471	A2	20020530	WO 2001-US44041	20011123
	WO 2002042471	A3	20030313		
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
	AU 2002037676	A5	20020603	AU 2002-37676	20011123
	WO 2003049525	A2	20030619	WO 2002-US16223	20020523
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
PRAI	US 2000-252541P	P	20001122		
	US 2001-992430	A2	20011123		
	WO 2001-US44041	W	20011123		

AB This invention provides biocatalysts that are recombinant yeast cells comprising recombinant expression vectors encoding heterologous **lactate dehydrogenase** (LDH) genes for producing lactate. Thus, the *Kluyveromyces thermotolerans* LDH gene was expressed in *K. marxianus* and *K. lactis* from the *S. cerevisiae* phosphoglycerate kinase gene promoter. These recombinant yeast produced up to 2.5 g lactate/L from glucose in small-scale cultures.

L3 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2002:902212 CAPLUS
 DN 138:3760
 TI Production of lactate using crabtree negative organisms expressing recombinant **lactate dehydrogenase** genes
 IN Rajgarhia, Vineet; Hatzimanikatis, Vassily; Olson, Stacey; Carlson, Ting; Starr, John N.; Kolstad, Jeffrey J.; Eyal, Aharon
 PA Cargill Dow Polymers, LLC, USA
 SO U.S., 44 pp., Cont.-in-part of U.S. Ser. No. 316,490.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI US 6485947 B1 20021126 US 2000-574873 20000519
PRAI US 1999-316490 A2 19990521

AB Crabtree neg. organisms such as *Kluyveromyces*, *Pichia*, *Hansenula* and *Candida*, are used to make selected org. products such as lactic acid. The organisms are cultured in a first culture medium that includes glucose, under conditions that promote cellular respiration. The organisms are then cultured under a second set of conditions that promote prodn. of the selected org. product. The organisms preferably contain an exogenous **lactate dehydrogenase** gene. Thus, gene PDC1 encoding pyruvate decarboxylase in *Kluyveromyces marxianus* was disrupted by site-directed mutagenesis. The LDH gene from ***Kluyveromyces thermotolerans*** under control of the *Saccharomyces cerevisiae* PDC1 promoter was then introduced to this *Kluyveromyces marxianus* strain by electroporation. The resulting strain was able to produce lactic acid using aerobic conditions for cell growth and anaerobic conditions for lactate prodn.

RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1994:318969 CAPLUS

DN 120:318969

TI Screening of lactic acid-producing yeast and its feature on lactic acid production

AU Yoshizawa, Kiyoshi; Yanagida, Akira; Kakuta, Kiyokazu; Koizumi, Takeo

CS Fac. Brew. Ferment. Technol., Tokyo Univ. Agric., Tokyo, 156, Japan

SO Nippon Jozo Kyokaishi (1994), 89(3), 229-33

CODEN: NJKYES; ISSN: 0914-7314

DT Journal

LA Japanese

AB Among 2500 strains of yeasts tested, a strain producing a large amt. of lactic acid together with EtOH was screened and was identified as ***Kluyveromyces thermotolerans*** AN 109. This strain showed strong activity of **lactate dehydrogenase**, which was considered to be one of the main causes of high lactic acid prodn., when it was cultured statically. But in aerobically grown cells, both **lactate dehydrogenase** activity and lactic acid prodn. decreased significantly. The yeast grown aerobically in media contg. phenethyl alc. showed high prodn. of both EtOH and lactic acid, together with strong activities of the related enzymes such as **lactate dehydrogenase**, alc. dehydrogenase, and pyruvate decarboxylase.

L3 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1990:437467 CAPLUS

DN 113:37467

TI Characterization of yeasts with high L[+]-lactic acid production: Lactic acid specific soft-agar overlay (LASSO) and TAFE-patterns

AU Witte, V.; Krohn, U.; Emeis, C. C.

CS Inst. Mikrobiol., RWTH Aachen, Aachen, 5100, Fed. Rep. Ger.

SO Journal of Basic Microbiology (1989), 29(10), 707-16

CODEN: JBMIEQ; ISSN: 0233-111X

DT Journal

LA English

AB Only few yeast strains are known for the high level prodn. of L[+]-lactate. Indications are reported for the conspecificity of ***Kluyveromyces thermotolerans*** (formerly *Saccharomyces veronae*) strain CBS 4728 with Stamm 42 (formerly *Saccharomyces pretoriensis*). Evidently Stamm 42 has little, if any relation to *Saccharomyces cerevisiae*. The method of R. E. Subden et al. (1982) was optimized for the detection of lactate-producing microorganisms. Using this method with 100 yeast strains, no addnl. strains could be found with high L[+]-lactate prodn. This method may provide a useful tool for the mol. cloning of the unique yeast L[+]-**lactate dehydrogenase** gene(s).

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Characterization of yeasts with high L[+]-lactic acid production lactic acid specific soft-agar overlay (LASSO) and TAFE-pattern

Witte V, Krohn U, Emeis CC.

Institut fur Mikrobiologie/BioIV, RWTH Aachen, FRG.

Only few yeast strains are known for the high level production of L[+]-lactate. We report indications for the conspecificity of *Kluyveromyces thermotolerans* (formerly *Saccharomyces veronae*) strain CBS 4728 with Stamm 42 (formerly *Saccharomyces pretoriensis*, RADLER 1984). We suggest that Stamm 42 has little, if any relationship to *Saccharomyces cerevisiae*. Furthermore, we have optimized the method of Subden et al. (1982) for the detection of lactate producing microorganisms. Using this method in a screening with 100 yeast strains of our institute collection, we could not find additional strains with high L[+]-lactate production. This method may provide a useful tool for the molecular cloning of the unique yeast L[+]-LDH1) gene (s).

PMID: 2698956 [PubMed - indexed for MEDLINE]

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2	BRS	L2	30	kluyveromyces near2 thermotolerans	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2003/08/13 11:37	
3	BRS	L3	1	I2 and I1	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2003/08/13 11:37	
4	BRS	L4	419	kluyveromyces and I1s	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2003/08/13 11:38	

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5	BRS	L5	2	kluyveromyces and l1	USPA T; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB	2003/08/13 11:38	

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